species instead of 3 distinct pairs. Moreover, the hosts are different for the two monogenoideans.

With *Ancyrocephaloides* Yamaguti, 1938, also the present species shows resemblance to a remarkable extent especially in the presence of symmetrical anchors, small body, absence of haptoral bars, confluent crura, eyes and head organs. But even in these organs the details differ considerably as described. The glandular vesicles of the haptor of *Ancyrocephaloides* are not observed in the present species. The two prominent lateral lobes of *Ancyrocephaloides* are not observed in the new genotype. The structure of the male terminalia are also widely different.

Glandulocephalus thus resembles *Amphibdella* Chattin, 1874, and *Ancyrocephaloides* Yamaguti, 1938, in many generic characters but is different from both in many other characters of generic importance. In the extreme smallness of the body and most of the generic characters it has more inclination to the *Ancyrocephaloides* type. Hence the new genotype is included in family Tetraonchoididae Bychowsky, 1951, of the order Tetraonchidea Bychowsky, 1957.

Generic name signifies the lateral cephalic glands of the worm and the species is named after the research ship from which the material for study was collected.

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Indian Ocean Biological Centre, R. V. UNNITHAN
Ernakulam-6,
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26. A NEW MONOGENETIC TREMATODE *SAURICOTYLE SPROSTONI* GEN. ET SP. N. ON THE GILLS OF THE LIZARD FISH *SAURIDA TUMBIL* (BLOCH) FROM THE ARABIAN SEA

(*With four text-figures*)

During the second cruise of *I.N.S. KISTNA* in the Arabian sea during the period 3rd to 14th November, 1962, with the International Indian Ocean Expedition, four specimens of the lizard fish *Saurida tumbil* (Bloch) were obtained from a trawl collection, off Bombay, on 14 November. Of

these, the largest specimen harboured three specimens of a monogenetic trematode on its gills, while the other three were devoid of any ectoparasite. All three specimens of monogenetic trematodes were of the family Diclidophoridae, Fuhrmann, 1928, in essential characters but could not be accommodated in any of the existing species or genera of the family. Hence the specimens are assigned to a new genus *Sauricotyle* and species *Sauricotyle sprostoni* and described below. The generic name refers to the name of the host. The species is named in honour of Miss Nora G. Sproston whose constant guidance and encouragement have helped me considerably in my work on this interesting group of invertebrates.

Sauricotyle gen. nov.

Diclidophoridae, with an elongated 'plectanocotylid' body shape; haptor demarcated from body proper, with 4 pairs of clamps 4 on each side borne on long peduncles; clamp structure declidophorid with broad cuticularised sclerites abaxial and adaxial halves asymmetrical; terminal anchored lappet absent; testes numerous intercrural, post-ovarian; male terminalia armed with a simple cluster of recurved spines; male genital pore median ventral at the intestinal bifurcation; ovary inverted U-shaped; vitelline ducts present, vitellaria large, oral pouches larger than pharynx, oesophagus unbranched, crura confluent at the proximal level of the haptor.

Ectoparasitic on marine fishes.

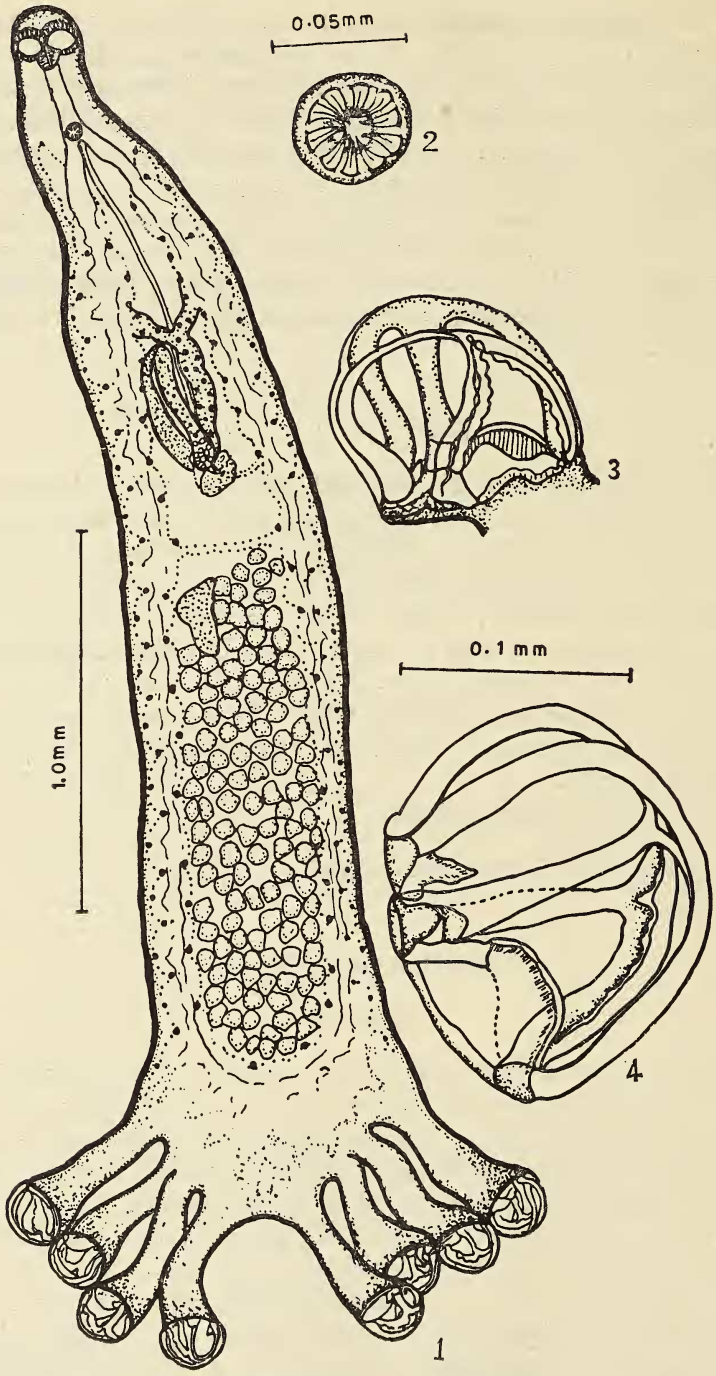
Type species: *Sauricotyle sprostoni*.

Sauricotyle sprostoni sp.nov.

(Figs. 1-4)

Body elongate, anterior and narrow, mid-body almost parallel-sided but widening at the haptoral base into the four pairs of long pedunculate clamps, four on each side separated medially by a wide cleft at the posterior end of the worm; total length 3·5 to 4·2 mm and maximum width 0·6 to 0·9 mm across the body at the base of the haptor.

Haptor, devoid of extensions of body organs, forms almost a quarter of the total body length, with four pairs of clamps, 4 on each side one behind the other borne on long slender peduncles; clamps almost similar in size, wider than long, 135×190 μ-145×200 μ, and essentially diclidophorid in structure, as shown in figures 3 and 4. The well cuticularised dorsal and ventral jaws are broad at the base near the articulation region and continuous distally. The dorsal and ventral arms of the broad



1. *Sauricotyle sprostoni* n. gen., n. sp., complete worm, dorsal view; 2. Male genital pore with the cluster of recurved spines; 3. One clamp, dorsal view; 4. Another clamp, ventral view.

U-shaped median spring is distally continuous with the curvature of the dorsal and ventral jaws of the clamp. The dorsal arms of the median spring has a frilled outer margin and the clamp has a convex additional piece of cuticularised sclerite on the abaxial half, articulated at the base between the median spring and the jaw sclerites. A similar sclerite is lacking on the adaxial half of the clamps, the abaxial and adaxial halves of the clamps are asymmetrical ; weak rib-like thickenings are indicated on the ventral surface of capsule walls. A terminal lappet has not been observed in any of the specimens, but in one of the specimens a pair of very small anchors could be traced at the region of the posterior end of the body between the last pair of clamps where a terminal lappet with anchors is usually indicated in plectanocotylid worms. This indication is however, not observed in the other two specimens though this area is stained darker than the rest.

Mouth subterminal slit-like, without preoral glands ; oral pouches large oval, similar, $90 \times 60\ \mu$; pharynx small, oval, $60 \times 40\ \mu$, wedged in between the oral pouches ; oesophagus narrow and unbranched, bifurcates into the crura at about $\frac{1}{8}$ the total length from the anterior end of the body ; crura with many lateral outer branches and few short inner branches and confluent posteriorly at the base of the haptor with short branches to each clamp peduncle.

Testes numerous, irregular in shape, all post-ovarian, intercrural terminating at the base of the haptor bordered by the intestinal confluence ; seminal vesicle elongate oval and situated at the anterior lateral region of the testes zone ; vas deferens long median and narrow opening into the male genital pore placed at the intestinal bifurcation. The male pore is armed with 10 conical recurved spines pointing into the median pore which is 0·34 mm from the anterior end of the worm and placed at the centre of a disc-like area of 0·05 mm in diameter. An elaborately armed male intromittent organ is not observed in this species.

Ovary intercrural, inverted U-shaped and situated in the second fifth of the body between the left intestinal crus and the median vitelline duct ; oviduct short and narrow, connecting the distal end of the ovary with the ootype. Ootype median oval and situated posteriorly near the distal ovary and median vitelline duct. A genito-intestinal canal is present connecting the ootype and the right intestinal crus.

Vitellaria small and scattered around the crura and branches, from the level of intestinal bifurcation to the base of the haptor and confluent posteriorly along with the intestinal confluence. Transverse vitelline ducts short and broad, joins at the anterior level of the ovary to form the median vitelline duct which is long and broad narrowing posteriorly parallel to ovary to empty into the ootype. A vaginal duct or vaginal pore is not observed.

Discussion

The new monogenetic trematode has many of the family characters of Plectanocotylidae, Poche 1925, especially an elongate symmetrical body and haptor with four pairs of pedunculate clamps, male terminalia armed with a cluster of conical curved spines, U-shaped ovary with limbs directed backwards, numerous postovarian testes, absence of vagina and presence of a genito-intestinal canal. However, there are many important characters showing marked differences from the family : the clamps though basically plectanocotylid, the jaw moities are continuous medially and articulated with the expanded extremities of the U-shaped median spring. The jaw sclerites are not jointed. The median spring is broad and complete with corrugated outer margin, and there is a convex additional piece of sclerite on the axial half of the clamp which is different from the oblique sclerite of gastrocotylid worms. A terminal anchored lappet is not observed. The male terminalia though armed is simple with a cluster of spines and not with a sheaf of long slender spines forming a cirrus. The pattern of sclerites in the clamps and the structure of the male terminalia makes this species very different from the typical plectanocotylid worm where the development of these organs are on different footing than the present species. The sclerite pattern shows the species to be more close to Mazocraeidae, Price, 1936, but the cuticularisation is of a higher grade and the sclerites are more advanced in structure. The male terminalia is of a very simple pattern forming a cluster of recurved spines more like those of diclidophorid worms. The general shape of the body, distribution of clamps and gonads, and the structure of the male terminalia provides the present species a position in family Diclidophoridae, Fuhrmann, 1928. The clamp structure, especially the broad cuticularised sclerites, shows close resemblance to those of diclidophorid worms. The closest resemblance is shown to *Upenicola upeneoides*, Unnithan, 1966, especially in the haptor, clamps and male terminalia, but it cannot be accommodated in the genus *Upenicola* due to the higher stage of development exhibited in these essential organ systems. Hence the present species is given the new generic status and accommodated in family Diclidophoridae occupying a position between *Upenicola*, Unnithan, 1966 and *Diclidophora*, Diesing, 1850.

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R. V. UNNITHAN

27. NOTE ON A SIMPLE DEVICE FOR THE RAPID SORTING OF BENTHIC SAMPLES

(*With two text-figures*)

INTRODUCTION

The problem of washing and sorting bottom samples obtained by dredging has long been felt by various workers. Fedikov (1960) devised a simple method for the washing of bottom samples that has been used extensively by U.S.S.R. Research Vessels, participating in the International Indian Ocean Expedition. A similar device was used by us in our cruises in the Indian Ocean. Although this device (Fedikov's) was fairly effective, certain improvements introduced by us resulted in higher sorting efficiencies in much shorter times. This modified device is described in detail in this note.

Description :

The modified device consists of a cylindrical galvanized steel vessel, 90 cm long with an inside diameter of 60 cm. Inside the cylinder a spirally coiled tube of 2 cm diameter extends from the base to the apex as shown in figure 1. The upper surface of the coiled tube is provided with fine holes of 2 mm diameter spaced 1 cm apart so that when seawater is pumped into the tube through the inlet pipe, A, jets of water gush out with force. The outlet pipe at B lets out the remaining water, which is collected at the base of the cylinder and flows out through the tap C. At the top of the cylinder, 4 sieves of different meshes are placed one above the other, the smallest-meshed sieve being the lowermost and the widest-meshed the uppermost. The topmost sieve is reinforced with expanded-metal base. The cylinder is closed by a lid L, at the lower surface of which is fixed a coiled tube with inlet and outlet pipes D and E (Fig. 2). In this tube also there are minute holes spaced 1 cm apart but on the lower side so that when water is pumped into the pipe inlet D and let out through the outlet E, jets of water are directed downward with force.